MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019/2020

BCP2214 – COMPUTER PROGRAMMING
(All sections / Groups)

18 OCT 2019
9.00 a.m. - 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This paper consists of two pages, excluding the cover page.
2. This exam is a computer-based examination.
3. Please answer the question by using the **Microsoft Excel Version 2016 and Spyder IDE**, which installed in the computer.
4. All the answer templates are available in the provided USB. Copy the "template" folder into the computer's desktop and rename the folder with your student ID.
5. There are three questions in this exam. Answer **ALL** questions.
6. At the end of the examination, copy the folder named with your student ID to the provided USB for examination submission.

Question 1

Use Microsoft Excel 2016 to answer the question. The folder of Question01 consists of the dataset for question 1, namely "Question01.xlsx". Answer the **question a** to **question c**. Each question should answer in a sheet separately. Do not answer more than one question in a sheet.
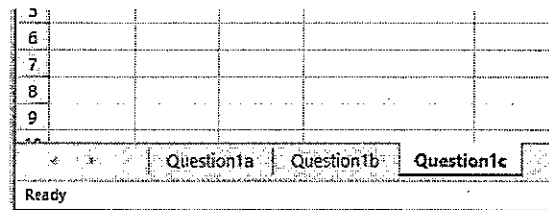
The dataset presents the incident report from a police station in a city in the USA. Read the "DataSecription" sheet for more detail explanation of the data in each column.

    a.) Scrub the dataset in the sheet of "IncidentReport" as follows,
        i.   add in a new column next to the OFFENSE_CODE. Name this new column as "OFFENSE_NAME".
        ii.   insert "NA" and fill the cell with yellow to all blank cell.
        iii.   use the appropriate data type for each column of the dataset.
        iv.   make sure the dataset is good to go.
    **Remember to copy the scrubbed data in to the sheet of "question a"

                                                                (20 Marks)

    b.) Display the top 10% most dangerous street to visit in each year and month in the sheet of "question b". Report it in a proper diagram.
        **Hints: use the timelines and remember to show the answer in the sheet of "question b"   (10 Marks)

    c.) Display the top 2 most dangerous weekday to visit in each month in sheet of "question c". Present in a proper diagram.   (10 Marks)

Question 2

Use the spyder IDE in the anaconda Navigator to answer this question. Please navigate the working directory into the folder of the USB driver that name as Question02.

Write a Python program to check the validity of password input by users. The validation Rule and regulation shows below,
    a.) At least 1 letter between [a-z] and 1 letter between [A-Z]
    b.) At least 1 number between [0-9]
    c.) Minimum length is eight characters
    d.) Maximum length is twenty Characters

**Hints: import the re package to write Python programming. A regular expression (or RE) specifies a set of strings that matches it; the functions in this module let you check if a particular string matches a given regular expression (or if a given regular expression matches a particular string, which comes down to the same thing). The sample of the re package usage displays as follows:

```
"""
This is a templete on how to use re package. Please key in the sample
passpord of "12345" and "abcd123" to understand further about
the function of re.search in re package.
"""
import re

password = input("Key in a password please")

if re.search("[a-z]",password):
    print("The password consists of small capital letter of alphabet")
else:
    print("Bad Password")
```

(30 Marks)

Question 3

Use the spyder IDE in the anaconda Navigator to answer this question. Please navigate the working directory into the folder of the USB driver that name as Question03.

Analyse the given dataset which located in the folder namely, "Question3RawData.csv", by writing the python script.

     a.) Load the data into the spyder ide.   (2 Marks)

     b.) Standardise the value of theta, pi and height between the value of 0 to 1.

                                                         (24 Marks)

     c.) Calculate the correlation for each observed variable.

                                                          (2 Marks)

     d.) Save the data into and new file and rename it as "Q3afterexam.csv"   (2 Marks)

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